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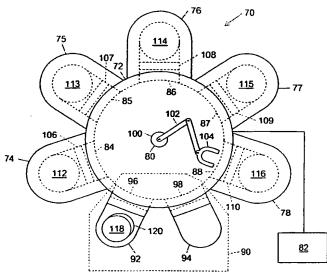
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(54) Title: METHOD AND APPARATUS FOR SUPERCRITICAL PROCESSING OF MULTIPLE WORKPIECES



(57) Abstract: An apparatus for supercritical processing of multiple workpieces comprises a transfer module, first and second supercritical processing modules, and a robot. The transfer module includes an entrance. The first and second supercritical processing modules are coupled to the transfer module. The robot is preferably located with the transfer module. In operation, the robot transfers a first workpiece from the entrance of the transfer module to the first supercritical processing module. The robot then transfers a second workpiece from the entrance to the second supercritical processing module. After the workpieces have been processed, the exturns the first and exceed worknieses to the entrance of the transfer module. Alternatively, the apparatus includes additional



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

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A. CLASSI IPC 7	FICATION OF SUBJECT MATTER H01L21/00		
	o International Patent Classification (IPC) or to both national classification	cation and IPC	
	SEARCHED ocumentation searched (classification system tollowed by classification)	(on symbols)	
IPC 7	H01L		
Documenta	tion searched other than minimum documentation to the extent that	such documents are included in the fields	searched .
Electronic d	ata base consulted during the international search (name of data ba	ase and, where practical search terms use	ed)
EPO-In	ternal, WPI Data, PAJ		•
C. DOCUM	ENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the re	elevant passages	Relevant to claim No.
X	WO 91 12629 A (BOK) 22 August 1991 (1991-08-22)		1,7-11, 15, 17-21, 23-30,33
	abstract; figures 29-32 page 21, line 12-14 page 22, line 33 -page 23, line	11	23-30,33
Α			31,32
X	WO 99 18603 A (APPLIED KOMATSU TI INC.) 15 April 1999 (1999-04-15) page 6, line 30 -page 7, line 3 page 8, line 23-30	ECHNOLOGY,	1-3,5,6, 9,12-15, 17-23, 25,27-33
	page 0, Title 23-30	-/	
X Furth	ner documents are listed in the continuation of box C.	χ Patent family members are listed	d in annex.
'A' docume conside 'E' earlier diffling de 'L' docume which i citation 'O' docume other m'P' docume later th.	nt which may throw doubts on priority claim(s) or scited to establish the publication date of another or or other special reason (as specified) and referring to an oral disclosure, use, exhibition or neans nt published prior to the international filing date but an the priority date claimed	 "T" later document published after the interpretation or priority date and not in conflict will cited to understand the principle or the invention "X" document of particular relevance: the cannot be considered novel or cannot involve an inventive step when the discurrent of particular relevance: the cannot be considered to involve an indocument is combined with one or ments, such combined with one or ments, such combination being obvious in the art. "&" document member of the same patent 	n the application but heavy underlying the claimed invention of the considered to occurrent is taken alone claimed invention nventive step when the ore other such docurus to a person skilled
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2 (Captinum	ntion) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category "	Citation of document, with indication, where appropriate, of the relevant passages		Relevant to claim No.
X	US 5 934 856 A (ASAKAWA ET AL.) 10 August 1999 (1999-08-10)		1-11,15, 17-21, 23, 25-30, 32,33
4	abstract; figure 10 column 16, line 46 -column 17, line 46		31
K	PATENT ABSTRACTS OF JAPAN vol. 1998, no. 10, 31 August 1998 (1998-08-31) -& JP 10 144757 A (DAINIPPON SCREEN MFG CO LTD), 29 May 1998 (1998-05-29)		1,9-11, 15-23, 25-30,33
A	abstract -& US 6 077 321 A (ADACHI ET AL.) 20 June 2000 (2000-06-20) figure 1		31,32

INTERNATIONAL SEARCH REPORT

Information on patent family members

PCT/US 00/41787

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
WO 9112629	A	22-08-1991	EP JP	0515488 A 6500427 T	02-12-1992 13-01-1994
WO 9918603	Α	15-04-1999	US EP	6235634 B 1027724 A	22-05-2001 16-08-2000
US 5934856	Α	10-08-1999	JP JP US	7335711 A 8046013 A 5769952 A	22-12-1995 16-02-1996 23-06-1998
JP 10144757	Α	29-05-1998	US	6077321 A	20-06-2000

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